

Abstract

A spoolable composite member having a sensor and an energy conductor embedded in the composite member. The spoolable composite member is capable of being spooled onto a reel for storage and for use in oil field applications. The spoolable tube exhibits unique anisotropic characteristics that provide improved burst and collapse pressures, increased tensile strength, compression strength, and load carrying capacity, while still remaining sufficiently bendable to be spooled onto a reel in an open bore configuration. The spoolable composite tube can include an inner protective layer, an inner pressure barrier layer, an interface layer, fiber composite layers, an outer pressure barrier layer, and an outer protective layer.

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